

## Material Safety Data Sheet



Weyerhaeuser

**Flexo Slow Dry Agent**

Weyerhaeuser Company  
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Additional Information: (253) 924-3865  
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Revised Date: August 20, 2004

**1. Product Identification**

Product	Manufacturing Location(s)
Estimate Number: F16001500 Ink Additive Description: Flexo Slow Dry	Specialty Products Division <b>Oregon Ink Plant</b> 5570 SW Western Avenue; Beaverton, OR 97005 (503) 644-8125 (information) <b>Ohio Ink Plant</b> 865 Pittsburgh Drive; Delaware, OH 43015 (740) 363-9882

Product Synonyms: Flexo Ink Additive, Product Number 033

**2. Hazardous Ingredients/Identity Information**

Name	CAS#	Percent	Agency	Exposure Limits	Comments
Diethylene Glycol  Synonyms: Diglycol, Glycol Ether, Ethylene diglycol, Glycol Ethyl Ether, DEG, Bis(Beta-Hydroxyethyl) Ether, 2-ethoxyethyl ether, ethanol, 2,2'-oxybis-	111-46-6	100%	OSHA ACGIH	Non Established	Toxic if swallowed

**3. Hazard Identification**

**Appearance and Odor:** Clear liquid with mild odor.

**Primary Health Hazards:** Very toxic if swallowed.

**Primary Route(s) of Exposure:**

- ☐ Ingestion: While not a likely source of exposure, diethylene glycol is considered toxic with irreversible effects if swallowed. May also causes drowsiness and dizziness.
- ☒ Skin: Moderate irritant, brief direct contact is harmless. Prolonged and/or repeated contact may cause irritation, redness, burning, drying, and cracking of the skin.
- ☐ Inhalation: Due to low vapor pressure inhalation is not a likely source of exposure unless heated. Where fogs or mists are created, the product may cause irritation.
- ☒ Eye: Moderately irritating to eyes.

**Medical Conditions Generally Aggravated by Exposure:** Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

### 3. Hazard Identification (cont'd.)

**Chronic Health Hazards:** Liver and kidney lesions and damage.

**Carcinogenicity Listing:**

- ☐ NTP: Not Listed
- ☐ IARC Monographs: Not Listed
- ☐ OSHA Regulated: Not Listed

### 4. Emergency and First-Aid Procedures

**Ingestion:** Do not delay. If swallowed, give two glasses of water (pint/0.5 liter) if victim completely conscious/alert. Do not induce vomiting unless directed to do by medical personnel. Seek medical attention if symptoms develop. Provide copy of MSDS to medical personnel.

**Eye Contact:** Flush with water to remove. Seek medical attention if irritation or discomfort persists.

**Skin Contact:** Immediately remove contaminated clothing. Wash skin with mild soap and water. Seek medical assistance if irritation or discomfort persists. Provide copy of MSDS to medical personnel.

**Skin Absorption:** Not expected to occur. Wash with soap and water.

**Inhalation:** Remove to fresh air. Seek medical assistance if persistent irritation, severe coughing, or breathing difficulty occurs. Provide copy of MSDS to medical personnel.

**Note to Physician:** May cause significant renal respiratory, and CNS toxicity. May cause significant acidosis.

### 5. Fire and Explosion Data

**Flash Point (Method Used):** 107°C / 225°F Closed Cup

**Flammable Limits:** LFL = 1.7% UFL = 10.6%

**Extinguishing Media:** Alcohol resistant foam, water, dry chemical powder, carbon dioxide.

**Autoignition Temperature:** 444°F/229°C

**Special Firefighting Procedures:** Self-contained breathing apparatus and protective clothing should be worn in chemical fires. Water may be ineffective, serving only to spread product, but may be used to cool containers.

**Unusual Fire and Explosion Hazards:** Material is aqueous and is not expected to burn. If heated, carbon monoxide may be evolved. It is recommended that containers be tightly closed and isolated from heat, electrical equipment, and flame. A closed container could possibly explode when exposed to extreme heat.

**HMIS Rating (Scale 0-4):** Health = 2 Fire = 1 Reactivity = 0 PPE = B

**NFPA Rating (Scale 0-4):** Health = 1 Fire = 1 Reactivity = 0

### 6. Accidental Release Measures

**Steps to be Taken In Case Material Is Released or Spilled:** Dike and contain spill with absorbent material such as clay or other commercially available material. Place in container for disposal. Wear safety glasses and chemical resistant gloves to minimize exposure. Ventilate contaminated area thoroughly.

### 7. Handling and Storage

**Precautions to be Taken In Handling and Storage:** Follow standard industrial practices when handling this product or empty containers. Avoid getting product on skin, eyes, or clothing. If contact with the product occurs, remove effected clothing and wash with soap and water. Store in a cool, dry, well

## 7. Handling and Storage (cont'd.)

ventilated area away from incompatible materials. Avoid excessive hot or cold temperatures. Keep containers tightly closed when not in use. Stainless steel, mild steel, and carbon steel are recommended materials for product storage.

## 8. Exposure Control Measures, Personal Protection

### Personal Protective Equipment:

**RESPIRATORY PROTECTION** – Under normal conditions of use, respiratory protection is not required.

If a fog or mist is produced, use NIOSH/MSHA approved respirator with organic vapor absorbing cartridges. The respirator program must comply with OSHA and ANSI standards.

**EYE PROTECTION** – Chemical safety glasses recommended.

**PROTECTIVE GLOVES** – Chemically resistant gloves are recommended.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT** – Eye wash station.

**WORK/HYGIENE PRACTICES** – Wash hands before eating, drinking, smoking, and at the end of the shift.

### Ventilation:

**LOCAL EXHAUST** – Provide local exhaust as needed to limit exposure.

**MECHANICAL (GENERAL)** – Provide general ventilation in processing and storage areas to limit exposures.

**SPECIAL** – None

**OTHER** – None

## 9. Physical/Chemical Properties

**Physical Description:** Clear liquid with mild odor.

**Boiling Point (@ 760 mm Hg):** 245°C / 472°F

**Evaporation Rate (Butyl acetate = 1):** < 0.0011

**Freezing Point:** -10°C / 14°F

**Melting Point:** -10°C / 14°F

**Molecular Formula:** C<sub>4</sub>H<sub>10</sub>O<sub>3</sub>

**Molecular Weight:** 106.12

**Oil-water distribution coefficient:** NAV

**Odor threshold:** Not Determined

**pH:** NAV

**Solubility in Water (% by weight):** 100% - completely soluble

**Specific Gravity (H<sub>2</sub>O = 1):** 1.0 – 1.2

**Vapor Density (air = 1; 1 atm):** 3.7

**Vapor Pressure (mm Hg):** < 1.3 Pa at 20°C

**Viscosity:** 20-35 seconds (#2 Zahn cup)

**% Volatile by Volume [@ 70°F (21°C)]:** 100%

**Density (lb/gal):** 9.33

**Volatile Organic Compounds (VOC's; %wt):** 100%

## 10. Stability and Reactivity

**Stability:** ☐ Unstable ☒ Stable

**Conditions to Avoid:** High temperatures and freezing conditions.

**Incompatibility (Materials to Avoid):** Strong bases or oxidizing or reducing agents. Strong Acids.

**Hazardous Decomposition or By-Products:** Carbon monoxide, carbon dioxide, and oxides of nitrogen.

**Hazardous Polymerization:** ☐ May occur ☒ Will not occur

## 10. Stability and Reactivity (cont'd.)

**Sensitivity to Mechanical Impact:** None

**Sensitivity to Static Discharge:** None

## 11. Toxicological Information

**Toxicity Data:** Oral rat LD50: 12565 mg/kg. Skin rabbit LD50: 11.89 g/kg Irritation: eye rabbit, standard Draize: 50 mg mild. There is a significant difference in acute oral toxicity between animals and man, with man being more susceptible than animals. The estimated fatal oral dose for man is 100 milliliters (1/2 cup)

**Components:** NAP

**Target Organs:** Kidney damage based on repeated dose toxicity. Tumors produced in animals are not considered relevant to humans.

## 12. Ecological Information

**Environmental Fate:** If released to soil, diethylene glycol is expected to have very high mobility.

Volatilization of diethylene glycol is not expected to be important from moist or dry soil surfaces.

Diethylene glycol will not be susceptible to direct photolysis on soil surfaces based on its absorption of light at wavelengths >290 nm. According to a biodegradation study conducted in a sandy loam, diethylene glycol is expected to biodegrade quickly in soil. If released to water, diethylene glycol is not expected to adsorb to suspended solids and sediment. Diethylene glycol will be essentially non-volatile from water surfaces. Bioconcentration of diethylene glycol is expected to be low in aquatic organisms. Although biodegradation test results vary, biodegradation of diethylene glycol is expected to be an important fate process in water. If released to the atmosphere, diethylene glycol will exist as a vapor based on its vapor pressure. Vapor-phase diethylene glycol is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals with an estimated half-life of about 13 hours.

**Environmental Toxicity:**

Fish: Low toxicity: LC/EC/IC50 > 1000 mg/l

Aquatic Vertebrates: Low toxicity: LC/EC/IC50 > 1000 mg/l

Algae: Low toxicity: LC/EC/IC50 > 1000 mg/l

## 13. Disposal Considerations

**Waste Disposal Method:** Check with your local sewer authority before disposing to sewer. This material is not a RCRA hazardous waste. In liquid form, this product may be determined to be a "special" waste. Dispose of material in accordance with local, state, and federal regulations

## 14. Transport Information

**Mode:** (Air, Land, water)

This material is not subject to DOT regulations under 49 CFR Parts 171-180

**Proper Shipping Name:**

NAP

**Hazard Class:**

NAP

**UN/NA:**

NAP

**TDG:**

Not a regulated product.

**Packing Group:**

NAP

**Information Reported for Product/Size:**

NAP

**USDOT Shipping Classification:**

NAP

## 15. Regulatory Information

**TSCA:** All ingredients of this product are listed.

**CERCLA:** Product ingredients are not subject to reporting requirements of CERCLA

**DSL:** All ingredients of this product are listed.

**STATE RIGHT-TO-KNOW:**

California: Prop 65 – This product does not contain substances identified on the Proposition 65 list at levels that pose a significant risk for purposes of Section 25249.10(c) or result in an observable effect for purposes of Section 25249.10(c) of the Act.

Minnesota: Hazardous Substance List – NAP

New Jersey: This product does not contain a substance identified on New Jersey's environmental hazardous substance list.

Pennsylvania: This product contains diethylene glycol a substance identified on Pennsylvania's environmental hazardous substance list.

**SARA 313 Information:** This product does not contain any chemical components with known CAS numbers that exceed the de minimis reporting levels established by SARA Title III, Section 313 and 40 CFR Part 372.

**SARA 311/312 Hazard Category:** This product has been reviewed according to the EPA "Hazard Categories" promulgated under SARA Title III Sections 311 and 312 and is considered, under applicable definitions, to meet the following categories:

An immediate (acute) health hazard	Yes
A delayed (chronic) health hazard	No
A fire hazard	No
A reactivity hazard	No
A sudden release hazard	No

**FDA:** This product complies with the Food and Drug Administration (FDA) requirements found in 21 CFR § 175. These regulations indicate that adhesives, inks, and related materials may be safely used for food packaging purposes, when they are separated by a functional barrier that prevents migration of the material into the food (Indirect Food Contact).

**WHMIS Classification:** Product does not meet WHMIS hazard classification criteria. The MSDS contains all other information required by the Controlled Products Regulations.

**CONEG:** This product is certified to be in full compliance with CONEG Model Legislation for packaging and packaging ink components.

## 16. Additional Information

**Date Prepared:** 08/20/04

**Date Revised:** NAP

**Prepared By:** Weyerhaeuser Corporate Environment, Health & Safety

**User's Responsibility:** The information contained in this Material Safety Data Sheet is based on the experience of occupational health and safety professionals and comes from sources believed to be accurate or otherwise technically correct. It is the user's responsibility to determine if the product is suitable for its proposed application(s) and to follow necessary safety precautions. The user has the responsibility to make sure that this MSDS is the most up-to-date issue.

**Definition of Common Terms:**

ACGIH	=	American Conference of Governmental Industrial Hygienists
C	=	Ceiling Limit
CAS#	=	Chemical Abstracts System Number
DOT	=	U. S. Department of Transportation
DSL	=	Domestic Substance List
EPA	=	U.S. Environmental Protection Agency
IARC	=	International Agency for Research on Cancer

## 16. Additional Information (cont'd.)

IATA	=	International Air Transport Association
IMDG	=	International Maritime Dangerous Goods
LCLo	=	Lowest concentration in air resulting in death
LC50	=	Concentration in air resulting in death to 50% of experimental animals
LDLo	=	Lowest dose resulting in death
LD50	=	Administered dose resulting in death to 50% of experimental animals
LEL	=	Lower Explosive Limit
LFL	=	Lower Flammable Limit
NAP	=	Not Applicable
NAV	=	Not Available
NIOSH	=	National Institute for Occupational Safety and Health
NPRI	=	Canadian National Pollution Release Inventory
NTP	=	National Toxicology Program
OSHA	=	Occupational Safety and Health Administration
PEL	=	Permissible Exposure Limit
RCRA	=	Resource Conservation and Recovery Act
STEL	=	Short-Term Exposure Limit (15 minutes)
TCLo	=	Lowest concentration in air resulting in a toxic effect
TDG	=	Canadian Transportation of Dangerous Goods
TDLo	=	Lowest dose resulting in a toxic effect
TLV	=	Threshold Limit Value
TSCA	=	Toxic Substance Control Act
TWA	=	Time-Weighted Average (8 hours)
UFL	=	Upper Flammable Limit
WHMIS	=	Workplace Hazardous Materials Information System